

REMARKS UNDER 37 CFR § 1.111

Formal Matters

Claims 1, 6-11, and 16-27 are pending after entry of the amendments set forth herein.

Claims 1-27 were examined and were rejected.

Please replace Claims 1, 6, 11, 19, 20, and 24 with the clean version provided above.

Claims 1, 6, 11, 19, 20, and 24 have been amended. Specifically, Claims 1, 11, 19, 20, and 24 have been amended to specify that the positively charged porous matrix comprises nylon and to specify that the urea derivative dye is 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof. Support for these amendments is found in claims 2, 12, and 15, and throughout the specification. Claim 6 has been amended solely to correct a typographical error.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

Applicants respectfully request reconsideration of the application and allowance of the pending claims in view of the amendments and remarks made herein.

No new matter has been added by the amendments and their entry by the Examiner is respectfully requested.

Rejection under 35 U.S.C. §102(e)

The rejection of Claims 1-23 under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 5,972,294 issued to Smith et al. has been maintained. The Office Action contends that Smith et al. discloses a reagent test strip comprising a polysulfone membrane, 10-(carboxymethylaminocarbonyl)-

3,7-bis(dimethylamino)phenothiazine, glucose oxidase and horse radish peroxidase. In addressing the Applicants' arguments in response to the rejection, the Office states:

It is the examiner's position that since Smith et al. disclose a test strip having the same components as those recited in the instant claims, the disclosed test strip would necessarily have the same properties including storage stability....Smith et al. specifically disclose a test strip in which the dye may be 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino) phenothiazine and specifically exemplify polysulfones and nylons as appropriate porous matrix materials. Since the test strip disclosed by Smith et al. and the composition recited in the instant claims have the same components, the properties recited in the claims, regarding storage stability of the composition, are necessarily present since a chemical composition and its properties are inseparable. (Office Action, page 4)

Applicants respectfully disagree with the assertion that the Smith et al. anticipates the instant invention.

In maintaining this rejection, the Office relies on the inherency of the storage stability of the claimed compositions and test strips. According to the law, a reference may anticipate a claim even if a feature recited in the claim is not specifically disclosed in the reference. However, the law is established that where the reference is silent as to a specific limitation in the claims, such a gap in the reference must be filled with recourse to extrinsic evidence in order for the reference to serve as an anticipatory reference by inherency. Such evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, *and that it would be so recognized by persons of ordinary skill in the art* at the time the invention was made. Continental Can Co. USA, Inc. v. Monsanto Co., 20 USPQ2d 1746, 1749-1750 (Fed. Cir. 1991) (holding that a summary judgment of inherency anticipation was deemed improper because of a material fact issue whether a prior art reference's process *necessarily* produced the claimed invention's features).

In addition, the characteristic must flow *undeniably and irrefutably* from the express disclosures of the prior art reference. Mere possibilities or even probabilities are not enough to support a finding of anticipation. Motorola, Inc. v. Interdigital Technology Corp., 43 USPQ2d 1481 (Fed. Cir. 1997). In relying upon a theory of inherency, the Office Action must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd.Pat.App.& Inf. 1990).

In the present invention, the Applicants made the surprising and unexpected discovery that the combination of the dye 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine (i.e., DA-67) and a nylon membrane yielded a composition that was storage stable for long periods of time under various conditions. As amended, the presently pending claims reflect this discovery. One of skill in the art would not recognize that this teaching flows *undeniably and irrefutably* from Smith et al. Smith et al. simply describes reagent test strips comprising a polysulfone membrane, 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine, glucose oxidase and horse radish peroxidase, and various methods for their use. Smith et al. also states, in passing, that nylon can also be used as a matrix material (col. 6, line 29-30).

Nowhere does Smith et al. teach or suggest that any test strips are storage stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%. Thus, the Office has not made the showing of inherency required by law. The Office has not provided evidence *that it would be so recognized by person of ordinary skill in the art* at the time the invention was made that the combination of the dye 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine and a nylon membrane would *necessarily* yield a composition that was storage stable for long periods of time at various temperatures.

In fact, had the skilled artisan followed the teaching of Smith et al. to make the test strip specifically exemplified by Smith et al., namely a test strip comprising a polysulfone membrane and 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine, that artisan would have found that the composition was *not* storage stable. Provided with this response is a Declaration under 37 C.F.R. §1.132 by Sherry X. Guo, a co-inventor of the instant application. The Declaration establishes that a composition comprising a polysulfone membrane and 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine is not storage stable, but rather that the dye actually oxidizes quickly following drying in an oven. Thus, the finding that the composition comprising this dye and a nylon membrane is storage stable is unexpected and is not taught or suggested by Smith et al.

One of skill in the art would not necessarily recognize that Smith et al. disclosed a storage stable composition comprising a nylon membrane and 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine, as required by the law of inherency. Moreover, the Applicants have provided evidence that the specifically exemplified composition described in Smith et al. is not storage stable. Accordingly, the presently pending claims are not inherently anticipated by Smith et al. and this rejection under 35 U.S.C. §102(e) should be withdrawn.

Rejection under 35 U.S.C. §103(a)

The rejection of Claims 24-27 under 35 U.S.C. §103(a) as obvious over Smith et al has been maintained. The Office Action asserts that, while Smith et al. does not expressly disclose, among other things, a kit comprising a reagent test strip, a means for obtaining a blood sample and an analyte standard, it would have been obvious to one having ordinary skill in the art to include such items in a single package.

The law is clear that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 21 USPQ2d 1941 (Fed. Cir. 1992). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986). Finally, the prior art reference, or references when combined, must teach or suggest all the claim limitations. *In re Royka*, 180 USPQ 580 (CCPA 1974).

The deficiency of Smith et al. is described above. Since Smith et al. does not teach or suggest storage stable reagent test strips which are stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%, it would not have been obvious to the skilled artisan to include such test strips in a kit as claimed.

Since Smith et al. does not teach or suggest storage a storage stable composition of matter or reagent test strip as claimed, Smith et al. cannot render the present invention obvious. Accordingly, this rejection of Claims 24-27 under 35 U.S.C. §103(a) should be withdrawn.

Conclusion

In view of the above remarks, this application is considered to be in good and proper form for allowance and the Examiner is respectfully requested to pass this application to issue.

If the Examiner finds that a Telephone Conference would expedite prosecution of this application, he is invited to contact the undersigned (650) 327-3400.

In the event that the transmittal letter is separated from this document and the Patent Office determines that extensions or other relief is required and/or fees are due applicants, the Applicant petitions for any required relief, including extensions of time, and authorize the Commissioner to charge our Deposit Account No. 50-0815, Order Number LIFE008, for any fees due in connection with the filing of this document. The Patent Office is not authorized to charge issue fees to our Deposit Account.

Respectfully submitted,
BOZICEVIC, FIELD & FRANCIS LLP

Date: 5.10.02

By: _____


Bret Field
Registration No. 37,620

BOZICEVIC, FIELD & FRANCIS LLP
200 Middlefield Road, Suite 200
Menlo Park, CA 94025
Telephone: (650) 327-3400
Facsimile: (650) 327-3231

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 1, 6, 11, 19, 20, and 24 have been amended as follows.

Claims 2-5 and 12-15 have been canceled.

1. (Twice Amended) A storage stable composition of matter comprising:
a positively charged porous matrix comprising nylon; and
a urea derivative dye on at least one surface of said matrix, wherein said urea derivative dye is 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof,
wherein said composition is stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%.
6. (Once Amended) The composition according to Claim 1, wherein said urea derivative dye is a member of a peroxide producing signal producing system present on said matrix.
11. (Twice Amended) A storage stable reagent test strip for use in detecting the presence or determining the concentration of an analyte in a physiological sample, said strip comprising:
a positively charged porous matrix comprising nylon; and
a peroxide producing signal producing system present on said matrix, wherein said peroxide producing signal producing system includes [a urea derivative dye] 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof,
wherein said test strip is stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%.
19. (Twice Amended) An analyte detection or measurement system comprising:
 - (a) a storage stable reagent test strip comprising:
 - (i) a positively charged porous matrix comprising nylon; and

(ii) a peroxide producing signal producing system present on said matrix, wherein said peroxide producing signal producing system includes [a urea derivative dye] 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof; and

(b) an automated instrument,

wherein said test strip is stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%.

20. (Twice Amended) A method for detecting the presence or determining the concentration of an analyte in a sample, said method comprising:

(a) applying said physiological sample to a storage stable reagent test strip comprising:

(i) a positively charged porous matrix comprising nylon; and

(ii) a peroxide producing signal producing system present on said matrix, wherein said peroxide producing signal producing system includes [a urea derivative dye] 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof,

wherein said test strip is stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%;

(b) detecting a signal produced by said signal producing system; and

(c) relating said detected signal to the presence or concentration of said analyte in said physiological sample.

24. (Twice Amended) A kit for use in determining the concentration of an analyte in a physiological sample, said kit comprising:

(a) a storage stable reagent test strip comprising:

(i) a positively charged porous matrix comprising nylon; and

(ii) a peroxide producing signal producing system present on said matrix, wherein said peroxide producing signal producing system includes [a urea derivative dye] 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof,

wherein said test strip is stable for at least about six months at temperatures ranging from at least about -80°C to 60°C under humidity ranging from at least about 0% to 20%; and

(b) at least one of:

- (i) a means for obtaining said physiological sample and
- (ii) an analyte standard.